

# SEQUENCE LISTING

<110> Tsukahara, Kappei  
 Tsuchiya, Mamiko  
 Jigami, Yoshifumi  
 Nakayama, Kenichi  
 Umemura, Mariko  
 Okamoto, Michiyo

<120> METHOD OF SCREENING FOR COMPOUNDS THAT  
 INHIBIT THE ENZYMATIC ACTIVITY OF GWT1 GENE PRODUCT

<130> 082368-004400US

<140> 10/536,935

<141> 2006-02-15

<150> PCT/JP03/14909

<151> 2003-11-21

<150> JP 2002-339418

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Ile	Phe	Leu	Val	Ser	Asn	Leu	Leu	Thr	Gly	Phe	Ile	Asn	Met	Ser	Ile		
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Tyr	Ser	Leu	Thr	Trp	Thr	Leu	Leu	Ala	Leu	Tyr	Leu	Asp	Lys	Arg	Lys		
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Ile	Pro	Ser	Leu	Val	Ile	Tyr	Leu	Val	Asn	Tyr	His	Val	Glu	Lys	Pro	
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Ser	Ser	Pro	His	Arg	Gln	Asn	Asp	Thr	Lys	Glu	Asp	Lys	Ser	Asp	Glu	
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Phe	Leu	Pro	Ile	Val	Leu	Gly	Ile	Leu	Asp	Pro	Val	Leu	Asn	Leu	Val	
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Arg	Ile	Ser	Lys	Lys	Gln	His	Lys	Lys	Glu	Leu	Leu	Leu	Phe	Phe	Ser	
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gtc	gcc	act	act	cag	gga	tta	tat	ttg	gca	tgt	atc	ttc	tat	cac	tta	1104
Val	Ala	Thr	Thr	Gln	Gly	Leu	Tyr	Leu	Ala	Cys	Ile	Phe	Tyr	His	Leu	
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Ala	Phe	Ser	Leu	Phe	Ile	Ser	Asn	Leu	Ser	Phe	Leu	Gln	Pro	Ile	Ser	
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Ala Thr Phe Leu Leu Cys Tyr Asp Leu Ile Glu Lys Phe Ile Pro Gly	
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Asn Leu Thr Ser Thr Val Leu Asp Ser Ile Asn Asn Asn Gly Leu Phe	
420 425 430	
atc ttc ttg gtc agc aat tta tta aca ggg ttt att aac atg tcc atc	1344
Ile Phe Leu Val Ser Asn Leu Leu Thr Gly Phe Ile Asn Met Ser Ile	
435 440 445	
aac act ttg gaa act agc aat aaa atg gca gtg att atc ttg att ggc	1392
Asn Thr Leu Glu Thr Ser Asn Lys Met Ala Val Ile Ile Leu Ile Gly	
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Ile	Thr	Val	Tyr	Ser	Asn	Ser	Pro	Ser	Tyr	Leu	His	Tyr	Phe	Ile	Val
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Phe	Leu	Pro	Ile	Val	Leu	Gly	Ile	Leu	Asp	Pro	Val	Leu	Asn	Leu	Val			
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Pro	Arg	Phe	Ile	Ile	Gly	Ile	Gly	Ile	Ser	Ile	Gly	Tyr	Glu	Val	Ala			
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 Ile Phe Leu Val Ser Asn Leu Leu Thr Gly Phe Ile Asn Met Ser Ile  
 435 440 445  
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 Ser Ser Ser Ile Glu Thr Cys Gly Leu Leu Leu Ile Gly Ile Ala Cys  
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 Asn Val Leu Trp Val Asn Met Thr Ala Arg Asn Ile Leu Pro Lys Gly  
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 aat ctt ggg ttt ctt gtt gag ttt ttc atc ttt tgc tta att cca tta 192  
 Asn Leu Gly Phe Leu Val Glu Phe Phe Ile Phe Cys Leu Ile Pro Leu  
 50 55 60

ttt gtc att tac gtt tca tcg aaa gtt ggc gtt ttc act ctt tgc ata	240
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Ala Ser Phe Leu Pro Ser Phe Val Leu His Val Ile Ser Pro Ile Asn	
85 90 95	
tgg gat gtg ctg aga aga aaa cct ggt tgt tgt ctt act aaa aaa aat	336
Trp Asp Val Leu Arg Arg Lys Pro Gly Cys Cys Leu Thr Lys Lys Asn	
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gaa aat act ttt gat cga cga att gct gga gtc aca ttt tat cgt tct	384
Glu Asn Thr Phe Asp Arg Arg Ile Ala Gly Val Thr Phe Tyr Arg Ser	
115 120 125	
caa atg atg ttg gtt act gtc act tgc atc ctg gcc gtt gac ttt acc	432
Gln Met Met Leu Val Thr Val Thr Cys Ile Leu Ala Val Asp Phe Thr	
130 135 140	
ctt ttc ccg agg aga tat gcc aaa gtt gaa acc tgg gga aca tca ctg	480
Leu Phe Pro Arg Arg Tyr Ala Lys Val Glu Thr Trp Gly Thr Ser Leu	
145 150 155 160	
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Met Asp Leu Gly Val Gly Ser Phe Met Phe Ser Ser Gly Thr Val Ala	
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Gly Arg Lys Asn Asp Ile Lys Lys Pro Asn Ala Phe Lys Asn Val Leu	
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Trp Asn Ser Phe Ile Leu Leu Ile Leu Gly Phe Ala Arg Met Phe Leu	
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Thr Lys Ser Ile Asn Tyr Gln Glu His Val Ser Glu Tyr Gly Met His	
210 215 220	
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Trp Asn Phe Phe Phe Thr Leu Gly Phe Met Ala Leu Gly Val Phe Phe	
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Phe Arg Arg Ser Leu Lys Lys Val Ser Tyr Phe Asn Leu Ala Thr Phe	
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Ile Thr Leu Leu His His Cys Leu Leu Val Leu Thr Pro Phe Gln Lys	
260 265 270	



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Trp Ala Leu Ser Ala Pro Arg Thr Asn Ile Leu Ala Gln Asn Arg Glu	
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Gly Ile Ala Ser Leu Pro Gly Tyr Ile Ala Ile Tyr Phe Tyr Gly Met	
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Tyr Thr Gly Ser Val Val Leu Ala Asp Arg Pro Leu Met Tyr Thr Arg	
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Ala Glu Ser Trp Lys Arg Phe Gln Arg Leu Leu Phe Pro Leu Cys Ile	
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385 390 395 400	
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Gly	Arg	Lys	Asn	Asp	Ile	Lys	Lys	Pro	Asn	Ala	Phe	Lys	Asn	Val	Leu	
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Trp	Asn	Ser	Phe	Ile	Leu	Leu	Ile	Leu	Gly	Phe	Ala	Arg	Met	Phe	Leu	
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Ala Thr Tyr Ala  
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Leu Trp Ile Ala Leu Ser Pro Tyr Ile Arg His Gly Leu Leu Asn Asn  
40 45 50

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Tyr Leu Ile Cys Val Leu Pro Leu Leu Phe Gly Val Thr Ile Phe Ser  
55 60 65

act tcg cct ctc gta ttt acc tct ttt ttg tcc att att tcc ctc gct 354  
Thr Ser Pro Leu Val Phe Thr Ser Phe Leu Ser Ile Ile Ser Leu Ala  
70 75 80

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Phe Ile Thr Lys Ser Gln Lys Cys Phe Lys Ser Val Ser Ser Pro Glu  
85 90 95

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Lys Pro Lys Gly Gln Trp Leu Asp Glu Ser Asp Ser Asp Glu Glu Pro  
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Ala Glu Pro Ala Ser Ala Ala Gly Ser Ala Ala Val Ser Pro Val Lys  
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Leu Leu Pro Ser Gln Val Ala Phe Ala Ser Gly Ser Leu Leu Ser Pro

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His	Glu	Asp	Pro	Leu	Gly	Ile	Met	Gly	Val	Asn	Arg	Arg	Arg	Ser	Leu			
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Lys	Ala	Gln	Trp	Val	Lys	Glu	Lys	Gly	Arg	Leu	Pro	Phe	Leu	Thr	Val			
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Thr	Ser	Leu																
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ctc	gtc	tcc	aca	aaa	tct	ctt	tct	cct	cca	cct	cca	act	cct	acg	ccc	1029		
Leu	Val	Ser	Thr	Lys	Ser	Leu	Ser	Pro	Pro	Pro	Pro	Thr	Pro	Thr	Pro			
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tcc	tcg	ccc	gct	ctc	aac	tct	cac	atc	att	ccc	ctc	acc	ccg	tcc	ccg	1077		
Ser	Ser	Pro	Ala	Leu	Asn	Ser	His	Ile	Ile	Pro	Leu	Thr	Pro	Ser	Pro			
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ttc	act	tcc	atc	ctc	atc	tcg	ctc	cga	aaa	tcc	atc	ccc	atc	ctc	gtc	1125		
Phe	Thr	Ser	Ile	Leu	Ile	Ser	Leu	Arg	Lys	Ser	Ile	Pro	Ile	Leu	Val			
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ctc	ggc	ttt	ata	cgg	ttg	att	atg	gtc	aag	gga	tct	gat	tat	cct	gag	1173		
Leu	Gly	Phe	Ile	Arg	Leu	Ile	Met	Val	Lys	Gly	Ser	Asp	Tyr	Pro	Glu			

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His Val Thr Glu Tyr Gly Val His Trp Asn Phe Phe Phe Thr Leu Ala			
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ttg gtt cct gtg ctc gcc gtg ggc att cga cca ttg acg cag tgg ctt			1269
Leu Val Pro Val Leu Ala Val Gly Ile Arg Pro Leu Thr Gln Trp Leu			
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cgc tgg agt gtg ctt ggg gta atc atc tct ttg ctg cat cag ctg tgg			1317
Arg Trp Ser Val Leu Gly Val Ile Ile Ser Leu Leu His Gln Leu Trp			
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Leu Thr Tyr Tyr Leu Gln Ser Ile Val Phe Ser Phe Gly Arg Ser Gly			
	390	395	400
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Ile Phe Leu Ala Asn Lys Glu Gly Phe Ser Ser Leu Pro Gly Tyr Leu			
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Ser Ile Phe Leu Ile Gly Leu Ser Ile Gly Asp His Val Leu Arg Leu			
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Ser Leu Pro Pro Arg Arg Glu Arg Val Val Ser Glu Thr Asn Glu Glu			
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His Glu Gln Ser His Phe Glu Arg Lys Lys Leu Asp Leu Ile Met Glu			
	455	460	465
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Leu Ile Gly Tyr Ser Leu Gly Trp Trp Ala Leu Leu Gly Gly Trp Ile			
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Trp Ala Gly Gly Glu Val Ser Arg Arg Leu			
	485	490	
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		Ala Asn Ala Pro Tyr Val Phe	
		495	500
tgg gta gcg gca tac aat acc acc ttt ctc ctc ggc tac ctc ctc ctt			1755
Trp Val Ala Ala Tyr Asn Thr Thr Phe Leu Leu Gly Tyr Leu Leu Leu			
	505	510	515
acc cac att att cca tct ccc acc tct tcc caa aca tca cca tcg atc			1803
Thr His Ile Ile Pro Ser Pro Thr Ser Ser Gln Thr Ser Pro Ser Ile			

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Leu	Val	Pro	Pro	Leu	Leu	Asp	Ala	Met	Asn	Lys	Asn	Gly	Leu	Ala	Ile	
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Phe	Leu	Ala	Ala	Asn	Leu	Leu	Thr	Gly	Leu	Val	Asn	Val	Ser	Met	Lys	
	550					555					560					
aca	atg	tat	gcg	ccg	gcg	tgg	ttg	tca	atg	ggg	gtg	tta	atg	ttg	tat	1947
Thr	Met	Tyr	Ala	Pro	Ala	Trp	Leu	Ser	Met	Gly	Val	Leu	Met	Leu	Tyr	
565					570					575					580	
acc	ttg	aca	atc	agt	tgt	gta	ggg	tgg	ata	ctg	aaa	gga	cgg	agg	atc	1995
Thr	Leu	Thr	Ile	Ser	Cys	Val	Gly	Trp	Ile	Leu	Lys	Gly	Arg	Arg	Ile	
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Lys	Ile															

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1				5				10					15			
ggg	gct	tct	atc	tgg	agt	atc	aac	gct	gtc	agc	ctg	gtc	gca	ctg	gcg	96
Gly	Ala	Ser	Ile	Trp	Ser	Ile	Asn	Ala	Val	Ser	Leu	Val	Ala	Leu	Ala	
			20				25						30			
aca	tat	gct	ctc	tgg	atc	gcc	tta	tcg	ccg	tac	atc	cgt	cat	gga	ctc	144
Thr	Tyr	Ala	Leu	Trp	Ile	Ala	Leu	Ser	Pro	Tyr	Ile	Arg	His	Gly	Leu	
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ctg	aac	aac	tac	ctg	atc	tgt	gtt	ctt	ccc	cta	tta	ttc	ggg	gtg	acc	192
Leu	Asn	Asn	Tyr	Leu	Ile	Cys	Val	Leu	Pro	Leu	Leu	Phe	Gly	Val	Thr	
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Ile	Phe	Ser	Thr	Ser	Pro	Leu	Val	Phe	Thr	Ser	Phe	Leu	Ser	Ile	Ile	
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Ser Leu Ala Phe Ile Thr Lys Ser Gln Lys Cys Phe Lys Ser Val Ser	
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Ser Pro Glu Lys Pro Lys Gly Gln Trp Leu Asp Glu Ser Asp Ser Asp	
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Glu Glu Pro Ala Glu Pro Ala Ser Ala Ala Gly Ser Ala Ala Val Ser	
115 120 125	
cca gta aag ctt cta cct tcc caa gtg gcg ttc gct tcg gga tcc cta	432
Pro Val Lys Leu Leu Pro Ser Gln Val Ala Phe Ala Ser Gly Ser Leu	
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Leu Ser Pro Asp Pro Thr Thr Ser Pro Met Ser Pro Ser Ser Ser	
145 150 155 160	
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Ala Ser Gly His Glu Asp Pro Leu Gly Ile Met Gly Val Asn Arg Arg	
165 170 175	
agg tcg cta tta gaa gga gtt tcg ctt gat gtt ccg tca cat atc gac	576
Arg Ser Leu Leu Glu Gly Val Ser Leu Asp Val Pro Ser His Ile Asp	
180 185 190	
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Ser Lys Val Arg Ile Ser Pro Val Pro Tyr Leu Arg Leu Lys Lys Ser	
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Leu Ala Val Asp Phe Glu Val Phe Pro Arg Trp Gln Gly Lys Cys Glu	
245 250 255	
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Asp Phe Gly Thr Ser Leu Met Asp Val Gly Val Gly Ser Phe Val Phe	
260 265 270	
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Pro	Thr	Pro	Ser	Ser	Pro	Ala	Leu	Asn	Ser	His	Ile	Ile	Pro	Leu	Thr	
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Pro	Ser	Pro	Phe	Thr	Ser	Ile	Leu	Ile	Ser	Leu	Arg	Lys	Ser	Ile	Pro	
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atc	ctc	gtc	ctc	ggc	ttt	ata	cgg	ttg	att	atg	gtc	aag	gga	tct	gat	1008
Ile	Leu	Val	Leu	Gly	Phe	Ile	Arg	Leu	Ile	Met	Val	Lys	Gly	Ser	Asp	
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tat	cct	gag	cat	gtg	acg	gag	tac	ggc	gtg	cac	tgg	aat	ttc	ttc	ttc	1056
Tyr	Pro	Glu	His	Val	Thr	Glu	Tyr	Gly	Val	His	Trp	Asn	Phe	Phe	Phe	
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Thr	Leu	Ala	Leu	Val	Pro	Val	Leu	Ala	Val	Gly	Ile	Arg	Pro	Leu	Thr	
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Gln	Trp	Leu	Arg	Trp	Ser	Val	Leu	Gly	Val	Ile	Ile	Ser	Leu	Leu	His	
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Gln	Leu	Trp	Leu	Thr	Tyr	Tyr	Leu	Gln	Ser	Ile	Val	Phe	Ser	Phe	Gly	
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Arg	Ser	Gly	Ile	Phe	Leu	Ala	Asn	Lys	Glu	Gly	Phe	Ser	Ser	Leu	Pro	
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Gly	Tyr	Leu	Ser	Ile	Phe	Leu	Ile	Gly	Leu	Ser	Ile	Gly	Asp	His	Val	
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Leu	Arg	Leu	Ser	Leu	Pro	Pro	Arg	Arg	Glu	Arg	Val	Val	Ser	Glu	Thr	
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aat	gaa	gag	cat	gag	cag	agt	cat	ttt	gag	aga	aaa	aaa	ttg	gat	ttg	1392
Asn	Glu	Glu	His	Glu	Gln	Ser	His	Phe	Glu	Arg	Lys	Lys	Leu	Asp	Leu	
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Ile	Met	Glu	Leu	Ile	Gly	Tyr	Ser	Leu	Gly	Trp	Trp	Ala	Leu	Leu	Gly	
465					470					475					480	

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485 490 495	
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Pro Tyr Val Phe Trp Val Ala Ala Tyr Asn Thr Thr Phe Leu Leu Gly	
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Tyr Leu Leu Leu Thr His Ile Ile Pro Ser Pro Thr Ser Ser Gln Thr	
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Ser Pro Ser Ile Leu Val Pro Pro Leu Leu Asp Ala Met Asn Lys Asn	
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Gly Leu Ala Ile Phe Leu Ala Ala Asn Leu Leu Thr Gly Leu Val Asn	
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Val Ser Met Lys Thr Met Tyr Ala Pro Ala Trp Leu Ser Met Gly Val	
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Leu Met Leu Tyr Thr Leu Thr Ile Ser Cys Val Gly Trp Ile Leu Lys	
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Ser	Pro	Glu	Lys	Pro	Lys	Gly	Gln	Trp	Leu	Asp	Glu	Ser	Asp	Ser	Asp
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Ala	Ser	Gly	His	Glu	Asp	Pro	Leu	Gly	Ile	Met	Gly	Val	Asn	Arg	Arg
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Arg	Ser	Leu	Leu	Glu	Gly	Val	Ser	Leu	Asp	Val	Pro	Ser	His	Ile	Asp
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Ser	Lys	Val	Arg	Ile	Ser	Pro	Val	Pro	Tyr	Leu	Arg	Leu	Lys	Lys	Ser
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Ser	Leu	Gly	Leu	Val	Ser	Thr	Lys	Ser	Leu	Ser	Pro	Pro	Pro	Pro	Thr
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Pro	Thr	Pro	Ser	Ser	Pro	Ala	Leu	Asn	Ser	His	Ile	Ile	Pro	Leu	Thr
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Thr	Leu	Ala	Leu	Val	Pro	Val	Leu	Ala	Val	Gly	Ile	Arg	Pro	Leu	Thr	
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Gln	Trp	Leu	Arg	Trp	Ser	Val	Leu	Gly	Val	Ile	Ile	Ser	Leu	Leu	His	
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Arg	Ser	Gly	Ile	Phe	Leu	Ala	Asn	Lys	Glu	Gly	Phe	Ser	Ser	Leu	Pro	
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Gly	Tyr	Leu	Ser	Ile	Phe	Leu	Ile	Gly	Leu	Ser	Ile	Gly	Asp	His	Val	
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Tyr	Leu	Leu	Leu	Thr	His	Ile	Ile	Pro	Ser	Pro	Thr	Ser	Ser	Gln	Thr	
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		595														

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